

IN THE CLAIMS:

Please cancel claims 21-23 without prejudice or disclaimer and add the following new claims.

Pursuant to 37 C.F.R. § 1.121(c)(3), Applicants hereby submit a clean version of the new pending claims 24-39 in this application for the Examiner's convenience:

24. A method for detecting the presence of a chemical moiety comprising the steps of:

(a) forming a mixture comprising

(i) an agent which forms a reductant upon exposure of the mixture to an electrochemical potential sufficient to oxidize said agent, and

(ii) a chemical moiety which is not oxidized to a high oxidation state at said electrochemical potential and is capable of emitting electrochemiluminescence;

(b) applying electrochemical potential to the mixture, said electrochemical potential oxidizing said agent but not said chemical moiety;

(c) inducing the chemical moiety to emit electrochemiluminescence; and

(d) detecting said electrochemiluminescence.

25. A method for generating electrochemiluminescence comprising the steps of:

(a) forming a mixture comprising

(i) an agent which forms a reductant upon exposure of the mixture to an electrochemical potential sufficient to oxidize said agent, and

(ii) a chemical moiety which is not oxidized to a high oxidation state at said electrochemical potential and is capable of emitting electrochemiluminescence; and

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(b) applying electrochemical potential to the mixture, said electrochemical potential oxidizing said agent but not said chemical moiety; and

(c) inducing the chemical moiety to emit electrochemiluminescence.

26. A method for detecting an analyte of interest comprising the steps of:

(a) forming a mixture comprising

(i) an analyte of interest,

(ii) an agent which forms a reductant upon exposure of the mixture to an electrochemical potential sufficient to oxidize said agent, and

(iii) a chemical moiety which is

(1) not oxidized to a high oxidation state at said

electrochemical potential,

(2) capable of emitting electrochemiluminescence, and

(3) capable of binding to said analyte;

(b) applying electrochemical potential to the mixture, said electrochemical potential oxidizing said agent but not said chemical moiety;

(c) inducing the chemical moiety to emit electrochemiluminescence; and

(d) detecting said electrochemiluminescence.

27. The method of claim 26, wherein the chemical moiety comprises a luminescent rare earth metal chelate.

28. The method of claim 26, wherein the chemical moiety comprises a biological substance.

29. The method of claim 28, wherein the biological substance is an antibody.

30. The method of claim 28, wherein the chemical moiety further comprises a luminescent metal chelate.

31. The method of claim 26, wherein the analyte of interest is a substance selected from the group consisting of whole cells, viruses, subcellular particles, nucleic acids, polysaccharides, proteins, glycoproteins, lipoproteins, lipopolysaccharides, lipids, fatty acids, peptides, cellular metabolites, hormones, pharmacological agents, tranquilizers, barbiturates, alkaloids, steroids, vitamins, amino acids, sugars and non-biological polymers.

32. The method of claim 26, wherein the analyte of interest is a substance selected from the group consisting of insulin, digoxin, digitoxin, T4 thyroid hormone, fungus, nematode, serum-derived antibody, monoclonal antibody, DNA fragment and RNA fragment. –

33. A method for detecting an analyte of interest comprising the steps of:

(a) forming a mixture comprising:

(i) an analyte of interest,

(ii) an agent which forms a reductant upon exposure of the mixture to an electrochemical potential sufficient to oxidize said agent,

(iii) a binding reagent which binds the analyte of interest and

(iv) a chemical moiety which is:

(1) not oxidized to a high oxidation state at said

electrochemical potential,

(2) capable of emitting electrochemiluminescence, and

(3) capable of competing with said analyte for binding to said

binding reagent;

(b) applying electrochemical potential to the mixture, said electrochemical potential oxidizing said agent but not said chemical moiety;

(c) inducing the chemical moiety to emit electrochemiluminescence; and

(d) detecting said electrochemiluminescence.

34. The method of claim 33, wherein the chemical moiety comprises a luminescent rare earth metal chelate.

35. The method of claim 33, wherein the chemical moiety comprises a biological substance.

36. The method of claim 35, wherein the biological substance is an analog of the analyte.

37. The method of claim 35, wherein the chemical moiety further comprises a luminescent metal chelate.

38. The method of claim 33, wherein the analyte of interest is a substance selected from the group consisting of whole cells, viruses, subcellular particles, nucleic acids, polysaccharides, proteins, glycoproteins, lipoproteins, lipopolysaccharides, lipids, fatty acids, peptides, cellular metabolites, hormones, pharmacological agents, tranquilizers, barbiturates, alkaloids, steroids, vitamins, amino acids, sugars and non-biological polymers.

39. The method of claim 33, wherein the analyte of interest is a substance selected from the group consisting of insulin, digoxin, digitoxin, T4 thyroid hormone, fungus, nematode, serum-derived antibody, monoclonal antibody, DNA fragment and RNA fragment.